

REQUEST FOR RECONSIDERATION
Application No. 09/888,656

Claims 1 and 14 are rejected under 35 U.S.C. § 102(e) as being anticipated by Umeda et al. (U.S. Patent No. 6,124,660; hereafter “Umeda”). Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Umeda in view of Baines (U.S. Patent No. 4,705,972). Claims 3-5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Umeda in view of Baines and ordinary skill in the art. Applicant respectfully traverses the prior art rejections.

In the Amendment filed March 4, 2003, Applicant argued that the claimed invention would not have been anticipated by or rendered obvious in view of the cited references because Umeda does not teach or suggest “a stator winding ... comprising a plurality of conductors including end portions joined to each other to form joint portions, wherein said joint portions comprise a metal having a melting point which is lower than a melting point of said conductors”, as required by the claim 1.

In response to the arguments for patentability, the Examiner (pages 4 and 5 of the Office Action) asserts that “Umeda et al. discloses a stator having windings, which are connected at conducting parts 61d using a metal 61e ... [and n]owhere in the claims is it disclosed that the metal is inserted (emphasis added) between the end portions.” However, Applicant did not argue that the Umeda does not disclose a metal inserted between the end portions. Rather, Applicant’s position is that Umeda does not teach or suggest joint portions which comprise a metal having a melting point which is lower than a melting point of the conductors.

Although the Examiner contends that Umeda (Figure 7) discloses all of the features of claim 1, Umeda simply discloses that ends 61d of conductor segments 61 (made of aluminum) are positioned in parallel with each other, and a welded portion 61e is formed at the portion

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where the ends 61d are adjacent to each other. In particular, Umeda is directed to an AC generator wherein the conductor segments of the stator coil are made of aluminum rather than copper. Umeda teaches that the ends 61d of the aluminum conductor segments 61 are directly joined together by welding (i.e., the ends of the aluminum conductor segments are heated until the ends of the conductor segments flow together to form a joint portion) without the use of an additional joining material such as a metal having a melting point which is lower than a melting point of the conductor segments 61 (see column 7, lines 16 and 17; and column 8, lines 25-42). Umeda teaches that utilizing aluminum conductor segments provides benefits when the joint portion is formed by arc welding the conductor segment ends because the melting point and heat conductivity of aluminum are lower than those of copper such that surrounding components such as the stator core. Further, Umeda teaches joining together the aluminum conductor segments by welding enables the conductor ends to maintain their original shape (see Figure 7) so that it is easy to maintain the separation distance between the joint portions.

However, as discussed on page 3 of the present application, since the ends 61d of the conductor segments 61 of Umeda are heated to the melting point for welding, an insulating coating in the vicinity of the ends 61d of the conductor segments 61 may be damaged such that a short-circuit failure may occur between adjacent conductors.

On the other hand, the present invention (see Figures 1 and 2 illustrating a first embodiment of the present invention) the conductors 33 forming the stator winding are joined to each other at end portions 33a by heating/melting an insert metal 33f, having a lower melting point than that of the conductors 33, form a joint portion 33e in which the end portions 33a are

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joined together. Since the insert metal 33f has a lower melting point than that of the conductors 33, the present invention provides a stator in which an amount of heating during joining of the conductors may be reduced, and, since the temperature rise in the conductors may be reduced, it is possible to prevent damage to an insulating coating of the conductors.

Accordingly, since Umeda discloses that the conductor segments are joined by welding, Applicant respectfully submits the cited reference does not teach or suggest “a stator winding ... comprising a plurality of conductors including end portions joined to each other to form joint portions, wherein said joint portions comprise a metal having a melting point which is lower than a melting point of said conductors”, as required by the claim 1.

Further, the Examiner did not respond to Applicant’s arguments for patentability with regards to dependent claim 2. As set forth in the Amendment filed March 4, Applicant submits the Examiner’s assertion that “Baines discloses ... that it is well know in the art to use copper or a copper alloy as a molten metal” is incorrect since the reference merely indicates that the electrical contact (terminal) is made of copper or copper alloy and is joined to the brush gear wire by conventional solder flux (i.e., the electrical contact is not welded, melted or fused to the brush assembly wire).

Lastly, Applicant respectfully submits that it is quite clear the cited references do not teach or suggest “said metal is interposed between said end portions of said conductors”, as required by dependent claim 14.

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Accordingly, Applicant respectfully submits that independent claim 1, as well as dependent claims 2-5 and 14, should be allowable because the cited references, alone or combined, do not teach or suggest all of the features of the claims.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


Respectfully submitted,

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